

ABSTRACT OF THE DISCLOSURE

A method for treating waste water uses a membrane bioreactor that produces excess biological sludge and treated water components. This is achieved by extracting the biological sludge from the bioreactor then causing contact between the biological sludge and dewatered effluent to form two resulting products. The first product contains polyelectrolyte loaded sludge. Polyelectrolyte is continually added to the polyelectrolyte loaded sludge during dewatering to separately form dewatered sludge and the dewatered effluent. This is followed by extracting, as a second product, polyelectrolyte free effluent. The polyelectrolyte free effluent is recycled to the bioreactor.